5. (Twice Amended) A metalloproteinase inhibitor which comprises an effective amount of at least a member selected from the group consisting of a compound of the formula (I):

B1 (101)+

$$R^{1}$$
 R^{3} R^{6} R^{6}

wherein R^1 to R^9 , all have the same meanings as defined in claim 16, and a pharmaceutically acceptable salt or solvate thereof.

Ba

8. (Twice Amended) A method of prophylactically and/or therapeutically treating diseases and/or disorders associated with tissue degradation comprising administering an effective amount of the compound according to claim 16.

12. (Twice Amended) A compound having the following formula (VI):

 3^3

wherein R^1 , R^2 , and R^6 to R^8 , all have the same meanings as defined in claim 16,

substituted phenyl- $\frac{1}{2}$ ower (C_1-C_4) alkyl, protected hydroxysubstituted phenyl-lower (C_1-C_4) alkyl, protected guanidosubstituted lower (C_1 C_4) alkyl-substituted phenyl-lower (C_1 C_4) alkyl, protected amino-substituted lower (C_1 C_4) alkylsubstituted phenyl-lower (C_1-C_4) alkyl, protected hydroxysubstituted lower (C_1 - e_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl, protected carboxy-substituted lower (C_1-C_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl, protected hydroxy-containing (C_1-C_8) straight chain or branched alkyl, and

cyano-substituted phenyl-lower (C₁-C₄) alkyl; R has the same meaning as defined for R, or is protected hydroxy-substituted (c1-c8) alkyl;

 R^{13} has the same meaning as defined for R^{5} , or is selected from the group consisting of protected carboxy-substituted lower (C₁-C₄) alkyl, protected hydroxy-substituted lower (C₁-C₄) alkyl, protected bis(phosphono)hydroxymethyl-substituted (C_1-C_{11}) alkyl, and a protected nitrogen-containing heterocyclic group; and

 R^{11} has the same meaning as defined for R^{3} , or is selected

from the group\consisting of protected hydroxy, protected

guanido-substit ψ ted phenyl-lower ($C_1 - C_4$) alkyl, protected

alkyl, nitro-substacted ($C_1 - C_6$) alkyl, protected carboxy-

amino-substituted phenyl-lower (C_1-C_4) alkyl, nitro-substituted phenyl-lower $(C_1 - c_4)$ alkyl, protected amino-substituted $(C_1 - c_6)$

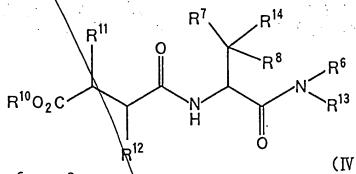
R has the same meaning as defined for R , or is selected from the group consisting of protected amino, protected hydroxy, and a group of the formula: $-X^{\prime}_{\uparrow}E$ or -X-A-E

wherein X and A, both have the same \backslash meanings as given above, and E is selected from the group consisting of nitro, cyano, amino, carboxyl, (c_1-c_1) hydroxyalkyl, protected amino, protected guanido, protected amidino, protected acylimidoyl, protected benzimidoyl, protected

bis(phosphono)methyl, protected bis(phosphono)hydroxymethyl, and protected $(C_1 - C_{11})$ alkyl-substituted imidazol-3-yl;

or a salt thereof.

13. (Twice Amended) A compound having the following formula (IV):



wherein R^6 to R^8 , all have the same meanings as defined in claim 16,

R¹⁰ is selected from the group consisting of unsubstituted or optionally substituted alkyl, unsubstituted or optionally substituted aralkyl, and a carboxy-protecting group;

R¹¹ has the same meaning as defined for R³, or is selected from the group consisting of protected hydroxy, protected guanido-substituted phenyl-lower (C_1 - C_4) alkyl, protected amino-substituted phenyl-lower (C_1 - C_4) alkyl, nitro-substituted phenyl-lower (C_1 - C_4) alkyl, protected amino-substituted (C_1 - C_6) alkyl, nitro-substituted (C_1 - C_6) alkyl, protected carboxy-substituted phenyl-lower (C_1 - C_4) alkyl, protected flydroxy-substituted phenyl-lower (C_1 - C_4) alkyl-protected guanido-substituted lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl, protected amino-substituted lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl, protected hydroxy-substituted lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl, protected carboxy-substituted lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl-substituted phenyl-lower (C_1 - C_4) alkyl, protected hydroxy-containing (C_1 - C_8) straight chain or branched alkyl, and cyano-substituted phenyl-lower (C_1 - C_4) alkyl, alkyl, and

 R^{12} has the same meaning as defined for R^{1} , or is protected hydroxy-substituted (C_1-C_8) alkyl;

bis(phosphono)methyl, protected bis(phosphono)hydroxymethyl, and protected ($C_1 - C_{11}$) alkyl-substituted imidazol-3-yl;

 R^{13} has the same meaning as defined for R^5 , or is selected from the group consisting of protected carboxy-substituted lower ($C_1^{-C_4}$) alkyl, protected hydroxy-substituted lower ($C_1^{-C_4}$) alkyl, protected hydroxy-substituted lower ($C_1^{-C_4}$) alkyl, and a protected nitrogen-containing heterocyclic group; and

600x,

R¹⁴ has the same meaning as defined for R⁹, or is selected from the group consisting of protected amino, protected hydroxy, and a group of the formula: -X-E or -X-A-E wherein X and A, both have the same meanings as given above, and E is selected from the group consisting of nitro, cyano, amino, carboxyl, (C₁-C₁) hydroxyalkyl, protected amino, protected guanido, protected amidino, protected acylimidoyl, protected benzimidoyl, protected

or a salt thereof.

16 A compound having the following formula (I):

sub ()

$$R^{1}O$$
 R^{3}
 R^{4}
 R^{7}
 R^{9}
 R^{8}
 R^{6}
 R^{5}
 R^{5}
 R^{5}
 R^{5}

wherein R^1 , R^2 , R^6 , R^7 and R^8 are each hydrogen,

BY

- 1) R^3 is (C_1-C_9) alkyl,
 - R^4 is (C_3-C_9) alkyl,
 - R^5 is (C_1-C_4) alkyl,
 - R is -X-Y, and Y is -A-B or -B,
 wherein X, Y, A and B are selected from the following
 combinations:
 - ① X is (C₁-C₆) alkylene, Y is -A-B, A is imino and B is amidino;
 - ② X is (C_1-C_6) alkylene, Y is -B and B is amino;
 - ③ X is phenylene, Y is -A-B, A is lower (C_1-C_4) alkylene-imino and B is lower (C_1-C_4) acylimidox1;
 - (4) X is (C_1-C_6) alkylene, Y is -A-B, A is imino and B is selected from the group consisting of lower (C_1-C_4) acylimidoyl and benzimidoyl;
 - X is phenylene, Y is -A-B, A is lower $(C_1 C_4)$ alkyl and B is amino; and
 - G X is phenylene, Y is -A-B, A is imino and B is selected from the group consisting of tetra-lower (C_1-C_4) alkyl bis(phosphono)methyl and tri-lower (C_1-C_4) alkyl

bis(phosphono)methyl;

54 C1 CODA 24

- \mathbb{R}^3 is $(C_1 C_9)$ alkyl,
 - R^4 is (C_3-C_9) alkyl,
 - R^5 is hydroxy-substituted (C_1-C_6) alkyl or a nitrogencontaining heterocyclic radical,
 - is -X-X, and Y is -A-B, wherein \times is (C_1-C_6) alkylene, $A \setminus is$ imino and B is lower $(C_1 - C_4)$ acylimidoyl;
- 3) R^3 is $(C_1 C_9)$ alky1, R^4 is (C_3-C_9) alkyl
 - ① R^5 is $(C_3 C_7)$ cycloalkyl, R^9 is -X-Y, and Y > -B, wherein X is $(C_1 - C_6)$ alkylene and B is amino; or
 - R^{5} is a nitrogen-containing heterocyclic radical, R^{9} is -X-Y, and Y is -A-B, wherein X is phenylene A is lower $(C_1 - C_4)$ alkylene-imino and B is lower $(C_1 - C_4)$ acylimidoy1;
- 4) R^3 is $(C_1 C_9)$ alkyl, R^4 is (C_3-C_9) alkyl,
 - R^{5} is carboxy-substituted lower (C_1-C_4) alkyl, di-lower $(C_1 - C_4)$ alkylamino-substituted lower $(C_1 - C_4)$ alkyl or hydroxy-substituted (C₁-C₆) alkyl, and
 - R^9 is -X-Y, wherein X is phenylene and

wherein A and B are selected from the following . combinations: A is lower (C_1-C_4) alkylene-imino and B is lower $(C_1^--C_4^-)$ acylimidoyl; and A is lower $(C_1 - C_4)$ alkylene and B is amino; R^3 is $(C_1 - C_9)$ alkyl, R^4 is $(C_3 - C_9)$ alkyl, ① when R^5 is hydroxy-substituted (C_1-C_6) alkyl, R^9 is -X-Y, wherein X is phenylene and Y is -A-B A is lower (C_1-C_4) alkylene-imino and B is lower $(C_1 - C_4)$ acylimidoyl; or when R^5 is lower $(C_1 - C_4)$ alkyl, R^9 is -X-Y, wherein X is (C₁-C₆) alkylene and Y is -A-B, wherein A is imino\and B is amidino 6) R^3 is phenyl-lower $(C_1 - C_4)$ alkyl, R^4 is (C_3-C_9) alkyl, ① R^5 is lower $(C_1 - C_4)$ alkyl,

 R^9 is -X-Y, and Y is -A-B,

wherein X is phenylene and

B is amino; or

Y is -A-B,

A is lower $(C_1 - C_4)$ alkylene and

② R⁵ is di-lower (C_1-C_4) alkylamino-substituted lower (C_1-C_4) alkyl, hydroxy-substituted (C_1-C_6) alkyl or Nower $(C_1 - C_4)$ alkyl,

 R^9 is X-Y, and Y is -A-B, wherein X is (C_1-C_6) alkylene and ackslash is imino and k is lower $(C_1 - C_4)$ acylimidoyl;

7) R^3 is nitrogen-containing heterocyclic radical-substituted lower $(C_1 - C_4)$ alkyl, carboxy-substituted phenyl-lower $(C_1 - C_4)$ alkyl, amino-substituted lower $(C_1 - C_4)$ alkyl-substituted phenyl-lower $(C_1 - C_4)$ alkyl, hydroxy-substituted phenyl-lower $(C_1 - C_4)$ alkyl, lower $(C_1 - C_4)$ alkoxycarbonyl-substituted phenyl-lower (C_1-C_4) alkyl, oxygen-containing (C_1-C_6) straight chain or branched alkyl, or hydroxy-substituted (C₁-C₈) alkyl;

> R^4 is $(C_3 - C_9)$ alkyl, R^5 is lower $(C_1 - C_4)$ alkyl, R^9 is -X-Y, and Y is -B, wherein X is trimethylene and B is amino;

8) ① R^3 is $(C_1 - C_9)$ alkyl, and R^4 is hydroxy-substituted (C_3-C_8) alkyl, or $\mathbb{Q} \cap \mathbb{R}^3$ is nitrogen-containing heterocyclic radical-substituted lower $(C_1 - C_4)$ alkyl, and

 R^4 is (C_3-C_9) alkyl,

 R^5 is lower $(C_1 - C_4)$ alkyl,

 R^9 is -X-Y, and Y is -B, wherein X is (C_1-C_6) alkylene and B is amino;

9) \mathbb{R}^3 is amino-substituted lower $(C_1 - C_4)$ alkyl-substituted phenyl-lower $(C_1 - C_4)$ alkyl, lower $(C_1 - C_4)$ advlimidoylimino-substituted (C₁-C₆) alkyl, lower acyllmidoylimino-substi

(C₁ C₄) alkylimino-subs
containing heterocyclic

(C₁-C₄) alkylimino-subs
isopropyliminomethylben

R⁴ is (C₃-C₉) alkyl,

R⁵ is lower (C₁-C₄) alkyl,

R⁹ is hydrogen; $(C_1 + C_4)$ alkylimino-substituted $(C_1 - C_6)$ alkyl, nitrogencontaining heterocyclic radical-substituted lower (C_1-C_4) alkylimino-substituted (C_1-C_6) alkyl, or isopropyliminomethylbenzyl,

 R^3 is aryloxy-substituted lower $(C_1 - C_4)$ alkyl, $(C_3 - C_7)$ cycloalky\substituted lower $(C_1 - C_4)$ alkyl, arylsulfonamido-substituted lower $(C_1 - C_4)$ alkylsubstituted phenyl-lower (C_1-C_4) alkyl, alkylsulfonamido-substituted lower($C_1 - C_4$) alkylsubstituted phenyl-lower (C_1-C_4) alkyl, or amino-substituted lower $\begin{pmatrix} c_1 - c_4 \end{pmatrix}$ alkyl-substituted phenyl-lower (C₁-C₄) alky

 R^4 is $(C_3 - C_9)$ alkyl,

 R^5 is lower $(C_1 - C_4)$ alkyl,

 R^9 is -X-Y, and Y is -A-B, wherein X is (C_1-C_6) alkylene,

A is imino and

B is amidino;

- 11) R^3 is phenyl-lower (C_1-C_4) alkyl, R^5 is lower $(C_1 - C_4)$ alkyl,
 - (1) when R^4 is (C_3-C_9) alkyl, $\frac{9}{R}$ is -X-Y, and Y is -A-B,

wherein X is (C_1-C_6) alkylene, A is imino and B is amidino;

- when R^4 is aryl-lower (C_1-C_4) alkyl, is -X-Y, and Y is -A-B, wherein X is $(C_1 - C_6)$ alkylene, A is imino and B is amidino; or
- when R^4 is $(C_3 C_9)$ alkyl, R^9 is -X-Y, and Y is -B, wherein X is (C_1-C_6) alkylene, and B is amino;

 R^3 is amino-substituted lower ($C_1 - C_4$) alkyl-substituted phenyl-lower $(C_1 - C_4)$ alkyl R^4 is $(C_3 - C_9)$ alkyl,

 R^5 is lower $(C_1 - C_4)$ alkyl,

 R^9 is -X-Y, and Y is -B, wherein X is $(C_1 - C_6)$ alkylene, and B is amino;

- 13) R^3 is amino-substituted phenyl-lower $(C_1 C_2)$ alkyl, R^4 is $(C_3 - C_9)$ alkyl,
 - R^5 is di-lower (C_1-C_4) alkylamino-substituted lower (C_1-C_4) alkyl,
 - R^9 is -X-Y, and Y is -A-B, wherein X is (C_1-C_6) alkylene, and A is imino and

B is lower $(C_1 - C_4)$ acylimidoyl;

14) R^3 is guanido-substituted phenyl-lower (C_1-C_4) alkyl, guanido-substituted lower (C_1-C_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl, or amino-substituted lower (C_1-C_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl,

 R^4 is (C_3-C_9) alkyl,

 R^5 is lower $(C_1 - C_4)$ alkyl,

R is -X-Y, and Y is -B, wherein X is (C₁-C₆) alkylene, and B is amino; or

15) R^3 is amino-substituted lower (C_1-C_4) alkyl-substituted phenyl-lower (C_1-C_4) alkyl,

 R^4 is $(C_3 - C_9)$ alkyl,

 R^{5} is lower $(C_{1}-C_{4})$ alkyl,

R is -X-Y, and Y is -A-B, wherein X is phenylene,

A is lower $(C_1 - C_4)$ alkylene, and

B is amino;

or a pharmaceutically acceptable salt or solvate thereof.

R¹, R², R⁶, R⁷ and R⁸ are each hydrogen,

1) R³ is methyl,

R⁴ is isobutyl,

R⁵ is methyl,

R⁹ is -X-Y and Y is -A-B or -B

wherein X, Y, A and B are selected from the following combinations:

① X is methylene or ethylene, Y is -A-B, A is imino and B is amidino;

The compound according to claim 16 wherein

- ② X is ethylene or trimethylene, Y is -B and B is amino;
- ③ X is phenylene, Y is -A-B, A is methyleneimino and B is acetimidoyl;
- X is trimethylene, Y is -A-B, A is imino and B is selected from the group consisting of acetimidoyl, propionimidoyl and benzimidoxl;
- ⑤ X is phenylene, Y is -A-B, A is methylene and B is amino; and
- X is phenylene, Y is -A-B, A is imino and B is selected from the group consisting of tetra-ethyl bis(phosphono)methyl, tetra-methyl bis(phosphono)methyl, tri-ethyl bis(phosphono)methyl and tri-methyl bis(phosphono)methyl;
- 2) R³ is methyl,
 R⁴ is isobutyl,
 R⁵ is 2-hydroxy-1-methylethyl or piperidyl,
 R⁹ is -X-Y, and Y is -A-B,
 wherein X is trimethylene,
 A is imino and

B is acetimidoyl;

54 0 054

B4 (0)4,

```
R<sup>3</sup> is methyl,
3)
    R is isobutyl,
        R<sup>5</sup> is cyclopropyl,
         R^9 is -X-Y, and Y is -B,
        wherein X is ethylene and
                B is amino;
         R<sup>5</sup> is morpholino,
            is -X-Y, and Y is -A-B,
        wherein X is phenylene,
                 A is methyleneimino and
                 B is acetimidoyl;
     R^3 and R^4 are each isobuty N
      R is 2-carboxyethyl, 2-dimethylaminoethyl or
         2-hydroxyethyl,
      R^9 is -X-Y,
         wherein X: is phenylene and
                  Y is -A-B,
                    wherein A and B are selected from the following
                              combinations:
                                   A is methyleneimino and
                                   B is acetimidoyl; and
                                   A is methylene and
                                    B is amino;
      R^3 and R^4 are each isobutyl,
           when R is 2-hydroxy-1,1-dimethylethyl,
               \cdot, R^9 is -X-Y,
                 wherein X is phenylene and
```

Y is -A-B,

wherein A is methyleneimino and B is acetimidoyl;

```
when R^5 is methyl,
              is -X-Y,
            therein X is methylene or ethylene and
                    Y is -A-B,
                      wherein A is imino and
                               B is amidino;
      is phenylpropy
     is isobutyl,
       R^5 is methyl,
       R^9 is -X-Y, and Y is -A-B,
          wherein X is phenylene and
                   A is methylene and
                   B is amino;\or
        R is 2-dimethylaminoethyl, 2-hydroxyethyl or methyl,
           is -X-Y, and Y is -A-B,
           wherein X is trimethylene,
                    A is imino and
                    B is acetimidoyl;
7) R<sup>3</sup> is morpholinopropyl, carboxyphenyl propyl,
       aminomethylphenylpropyl, hydroxyphenylpropyl,
       methoxycarbonylphenylpropyl, piperidinylpropyl,
        iso-butyloxyethyl, butoxyethyl, ethoxyethoxyethyl or
        hydroxyoctyl,
        is isobutyl,
     R<sup>5</sup> is methyl,
        is -X-Y, and Y is -B,
        wherein X is trimethylene and
```

B is amino;

```
is isobutyl, and
         is hydroxyoctyl, or
          is (3,4,4-trimethyl-2,5-dioxo-imidazolidin-1-yl)-
          propyl, and
      R4 is isopropyl,
  R<sup>5</sup> is methyl
      is -X-Y, and Y is -B,
      wherein X is trimethylene and
              B is amino;
  R is aminomethylphenylpropyl, aminomethylbenzyl,
      acetimidoyliminopentyl, isopropyliminopentyl,
      (pyridin-4-ylmethylimino)pentyl or
      isopropyliminomethyl enzyl,
   R is isobutyl,
   R^{5} is methyl, and
       is hydrogen;
     R is phenoxyethyl, cyclohexylpropyl, toluenesulfonamido-
10)
        methylbenzyl, methanesulfonamidomethylbenzyl or
        phthalimidomethylbenzyl,
     R<sup>4</sup> is isobuty1,
     R<sup>5</sup> is methyl, and
         is -X-Y, and Y is -A-B,
        wherein X is ethylene,
                A is imino and
                B is amidino;
         is phenylpropyl,
         is methyl,
         when R is isobutyl,
               R^9 is -X-Y, and Y is -A-B,
                  wherein X is methylene,
                           A is imino and
                           B is amidino;
```

② when R⁴ is naphthylmethyl,

R⁹ is -X-Y, and Y is -A-B,

wherein X is ethylene,

A is imino and

B is amidino; or

(00,7°

when R⁴ is isopropyl,
R⁹ is -X-Y, and Y is -B,
wherein X is trimethylene, and
B is amino;

12) R³ is aminomethylphenylpropyl,

① R⁴ is isobutyl,
R⁵ is methyl,
R⁹ is -X-Y, and Y is -B,
wherein X is methylene or ethylene, and
B is amino;

- ② R⁴ is isopropyl,

 R⁵ is methyl,

 R⁹ is -X-Y, and Y is -B,

 wherein X is ethylene, and

 B is amino;
- 13) R³ is aminophenylpropyl,

 R⁴ is isobutyl,

 R⁵ is dimethylaminoethyl,

 R⁹ is:-X-Y, and Y is -A-B,

 wherein X is trimethylene, and

 A is imino and

 B is acetimidoyl;

11

```
14) R<sup>3</sup> is guanidinophenylpropyl, guanidomethylphenylpropyl or aminomethylbenzyl,

R<sup>4</sup> is isobutyl,

R<sup>5</sup> is methyl, and

R<sup>9</sup> is -X-Y, and Y is -B,

wherein X is ethylene, and

B is amino; or

15) R<sup>3</sup> is aminomethylbenzyl,

R<sup>4</sup> is isobutyl,
```

R is aminomethylpenzyl,

R is isobutyl,

R is methyl, and

R is -X-Y, and Y is -A-B,

wherein X is phenylene,

A is methylene, and

B is amino.

18. a compound having the following formula (I):

wherein R^1 , R^2 , R^6 , R^7 and R^8 are each hydrogen,

R⁴ is isobutyl,

R⁵ is methyl,

R⁹ is -X-Y, and

1)

 R^3 is methyl,

is -X-Y, and Y is -A-B or -B,
wherein X, Y, A and B are selected from the following
combinations:

- ① X is (C_1-C_6) alkylene, Y is -A-B, A is imino and B is amidino;
- ② X is (C_1-C_6) alkylene, Y is -B and B is amino;
- ③ X is phenylene, Y is -A-B, A is methyleneimino and B is acetimidoyl;
- X is trimethylene, Y is -A-B, A is imino and B is selected from the group consisting of lower (C₁-C₄) acylimidoyl and benzimidoyl;
- ⑤ X is phenylene, Y is -A-B, A is methylene and B is amino; and
- ⑥ X is phenylene, Y is -A-B, A is imino and B is selected from the group consisting of tetra-lower (C_1-C_4) alkyl bis(phosphono)methyl and tri-lower (C_1-C_4) alkyl bis(phosphono)methyl;

```
R is isobutyl,
             is 2-hydroxy-1-methylethyl or piperidyl,
              is -X-Y \setminus and Y is -A-B,
sub
()
              wherein X \setminus is trimethylene,
                       A is imino and
                       B is\acetimidoyl;
      3) R^3 is methyl,
           R is isobutyl,
              R<sup>5</sup> is cyclopropyl
               R^9 is -X-Y, and Y is -B,
              wherein X is ethylene\and
                        B is amino;
                R<sup>5</sup> is morpholino,
                R^9 is -X-Y, and Y is -A-B
               wherein X is phenylene,
                        A is methyleneimino and
                        B is acetimidoyl;
```

4) R³ and R⁴ are each isobutyl,

R⁵ is 2-carboxyethyl, 2-dimethylaminoethyl or

2-hydroxyethyl,

R⁹ is -X-Y,

wherein X is phenylene and

Y is -A-B,

wherein A and B are selected from the following combinations:

- ① A is methyleneimino and B is acetimidoyl; and
- ② A is methylene and B is amino;

```
\mathbb{R}^4 are each isobutyl,
              is 2-hydroxy-1,1-dimethylethyl,
            wherein X is phenylene and
                     Y is -A-B,
                       wherein A is methyleneimino and
                                B is acetimidoyl;
       when R is methyl,
             wherein X is (C_1-C_6) alkylene and
                      Y is -A\B
                        wherein A is imino and
                                 B is amidino;
6) R<sup>3</sup> is phenylpropyl,
    R<sup>4</sup> is isobutyl,
        R^5 is methyl,
        R^9 is -X-Y, and Y is -A-B,
            wherein X is phenylene and
                    A is methylene and
                    B is amino; or
       R^{5} is 2-dimethylaminoethyl, 2-hydroxyethyl or methyl,
         R^9 is -X-Y, and Y is -A-B,
            wherein X is trimethylene,
                     A is imino and
                     B is acetimidoyl;
     {\tt R}^3 is nitrogen-containing heterocyclic radical-substituted
        propyl, carboxyphenylpropyl, aminomethylphenylpropyl,
         hydroxyphenylpropyl, methoxycarbonylphenylpropyl,
         oxygen-containing (C_1-C_6) straight chain or branched
         alkyl or hydroxyoctyl,
      R is isobutyl,
      R is methyl,
         is -X-Y, and Y is -B,
```

```
wherein X is trimethylene and
              B is amino;
       R^3 is isobutyl, and
       R is hydroxyoctyl, or
       R^3 is (3,4,4-trimethyl-2,5-dioxo-imidazolidin-1-yl)-
       R is isopropyl,
   R<sup>5</sup> is methyl,
   R^9 is -X-Y, and Y is -B,
      wherein X is trimethylene and
               B is amind;
   R^3 is amino-substituted methyl-substituted phenyl-lower
       (C<sub>1</sub>-C<sub>4</sub>) alkyl, acetimidoyliminopentyl,
       isopropyliminopentyl, (pyridin-4-ylmethylimino)pentyl
     or isopropyliminomethylbenzyl,
   R is isobutyl,
   {	t R}^5 is methyl, and
    R is hydrogen;
10) R_{i}^{3} is phenoxyethyl, cyclohexylpropyl, toluenesulfonamido-
        methylbenzyl, methanesulfonamidomethylbenzyl or
        phthalimidomethylbenzyl,
    R is isobutyl,
    R^5 is methyl, and
    R^9 is -X-Y, and Y is -A-B,
       wherein X is ethylene,
                A is imino and
                B is amidino;
```

8)

```
11)
SUB
C) 1,
CO) 1,
```

```
11) R<sup>3</sup> is phenylpropyl,
R<sup>5</sup> is methyl,
① when R<sup>4</sup> is isobutyl,
9 is -X-Y, and Y is -A-B,
wherein X is methylene,
A is imino and
B is amidino;
```

- when R⁴ is naphthylmethyl,
 R⁹ is -X-Y, and Y is -A-B,
 wherein X is ethylene,
 A is imino and
 B is amidino; or
- when R⁴ is isopropyl,
 R⁹ is -X-Y, and Y is -B,
 wherein X is trimethylene, and
 B is amino;
- 12) R³ is aminomethylphenylpropyl,
 R⁴ is (C₃-C₉) alkyl,
 R⁵ is methyl,
 R⁹ is -X-Y, and Y is -B,
 wherein X is (C₁-C₆) alkylene, and
 B is amino;
- 13) R³ is aminophenylpropyl,
 R⁴ is isobutyl,
 R⁵ is dimethylaminoethyl,
 R⁹ is -X-Y, and Y is -A-B,
 wherein X is trimethylene, and
 A is imino and
 B is acetimidoyl;

14) R³ is\guanidinophenylpropyl, guanidomethylphenylpropyl or aminomethylbenzyl, R⁴ is isobutyl,

 ${\tt R}^{\sf 5}$ is methy ${\tt N}$ and

is -X-Y, and Y is -B,

wherein X is ethylene, and

B is amino; or

15) is aminomethylbenzyl, is isobutyl, is methyl, and is -X-Y, and Y is -A-B,

wherein X is phenylene,

A is methylene, and

B is amino;

or a pharmaceutically acceptable salt or solvate thereof.